

STRUCTURE 154

This structure is a double-barreled reinforced concrete box culvert, located through Levee D4 about 5 miles west of Okeechobee. Control is effected by automatically operated sluice gates mounted on a reinforced concrete head structure.

PURPOSE

This structure maintains optimum upstream water control stages; it passes the design flood (30% of the Standard Project Flood) without exceeding the upstream flood design stage and restricts downstream channel velocities to non-damaging levels; and it prevents backflow from Lake Okeechobee during excessive stages in the lake caused by flood or wind tide.

OPERATION

This structure is operated to maintain the 23.3 foot optimum upstream stage insofar as possible through automatic controls as follows:

When the headwater elevation rises to 23.8 feet, the gates begin to open;

When the headwater elevation rises or falls to 23.3 feet, the gates become stationary;

When the headwater elevation falls to 22.8 feet, the gates begin to close.

When the tailwater rises to within 0.2 feet of the headwater, the gate closes to prevent backflow through the structure.

FLOOD DISCHARGE CHARACTERISTICS

	Design
Discharge Rate	<u>1000</u> cfs
	<u>30</u> % of SPF
Headwater Elevation	<u>20.1</u> feet
Tailwater Elevation	<u>19.1</u> feet
Type Discharge	uncontrolled <u>submerged</u>

DESCRIPTION OF STRUCTURE

Type reinforced concrete box culverts
Number of barrels 2
Size of barrels 8 ft. high by 10 ft. wide

Length of barrels 117 feet

Flow line elevation 5.0 to 4.0 feet

Service bridge elevation 32.2 feet

Water level which will by-pass structure 32.2 feet

Gates

Number 2

Type vertical lift gates

Size 8.25 feet high by 10.7 feet wide

Control automatic, on-site and remote computer control

Lifting Mechanism hydraulic cylinder, connected to gate by
stem, actuated by electric motor driven pump

Source of power commercial electricity

Emergency power source on-site LP powered electric generator
and manually operated hand pump, which
operates hydraulic cylinder.

Date of Transfer December 10, 1965

ACCESS: from State Road #70 at a point about 1½ miles east of C-38 via
Herbert Hoover Dike Road on the crest of L-D4

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Remote digital headwater and tailwater recorder

Gate Position Recorder Remote digital recorder on all gates

DEWATERING FACILITIES (per barrel) None

NOTE: This structure was destroyed May 10, 1974 and was replaced August 6, 1974 by a fixed crest sheet pile weir 125 feet long with a weir elevation of 22.0. A rehabilitation of the original structure was begun in 1976, and was completed in October 1977.